

EFFICIENT SCALING IN TRANSFORM DOMAIN

ABSTRACT OF THE DISCLOSURE

A method and system for efficient scaling in the transform domain, wherein transform coefficient data is provided as an input to a data processing system and scaled in the transform domain by application of a combined matrix. Some embodiments utilize discrete cosine transform data. One embodiment of the invention generates a combined matrix for one-dimensional scaling by selecting a rational scaling factor and matrix dimension value, generating a matrix with some zero values, applying a one-dimensional inverse transform, regrouping, and applying a one-dimensional forward transform. One application of the invention performs up-scaling operations, and another performs down-scaling operations. The invention also provides for two-dimensional scaling by selecting horizontal and vertical scaling parameters and generating first and second combined matrices responsive to the parameters and combining them into a single combined matrix. The invention may also incorporate a predetermined cost function.